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## A NEW APPARATUS FOR PHOTO-MICROGRAPHY.

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H. F. ATWOOD, F. R. M. S., Rochester, N. Y.

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At our meeting last year in Chicago, Mr. Walmsley, of Philadelphia, read a valuable paper on photo-micrography. No doubt many others have, like myself, become enthusiastic on the subject, and have done much work in that direction.

Benefiting by the hints derived from Mr. Walmsley's paper, I some months ago attached my Griffith Club microscope to a camera, and with it did some very creditable work. It was not, however, satisfactory to me wholly, and the thought occurred that if a combination of camera and microscope could be produced at a reasonable cost, it would, like a country newspaper, "fill a long-felt want." I finally submitted to Mr. Edward Bausch a drawing that, besides conveying an idea of what I wanted, represented the consumption of an unknown quantity of brain tissue.

He went to work on it, corrected my errors, added new ideas, and as a result I have the pleasure of presenting and describing to you to-day an apparatus capable of doing any work in photo-micrography perfectly, and that can be put in the hands of the microscopist at an expense less than that of ordinary camera attachment for his microscope.

As the apparatus is before you there is hardly a necessity for me to describe it in detail. The coarse adjustment is made by sliding the stage and fittings by hand on the slide on which it rests. On reaching an approximate focus, the stage is secured by a friction screw. The fine adjustment is controlled by a milled head placed directly under the ground-glass focusing-plate, and acts by lever on the nose-piece carrying the objective.

The advantage of this over tight cords ruining the fine adjustment fixtures, I think is apparent. The substage has a fitting to receive any ordinary illuminating apparatus, and by a simple device a condenser can be accurately centered.

#### ADVANTAGES.

1. Clearer definition than photographing through an eye-piece. This is so well known that it need not be argued.

2. The microscopist is not obliged to dismantle his microscope every time he wishes to photograph, and *per contra* is not obliged to upset his outfit to examine an object under his microscope. Both are at all times ready for their respective work.

Other advantages in minor details will occur to anyone who examines it closely. I will add that a series of amplifiers are being devised for increasing range of power; and for the purpose of accurate focusing with high powers the ground-glass plate is replaced by a plate carrying an eye-piece designed to focus on the aerial image.

The plate-holder and method of adjusting it is that of the Rochester Optical Company, which has done so much to advance amateur photography.

One word about the dry plates. I have tried various makes, but had never felt fully satisfied until I used those made by Prof. Forbes of this city. They give a very dense negative, and I find this a great advantage in photo-micrography. Their latitude of exposure, too, is quite elastic, and that is a great desideratum, especially for the tyro.

